

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/033,363	BRADLEY	
	Examiner Andrew W. Johns	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to \_\_\_\_\_.
2.  The allowed claim(s) is/are 1-7.
3.  The drawings filed on 25 October 2001 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All      b)  Some\*      c)  None      of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

## REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: None of the prior art teaches or suggests the claimed invention. Specifically, claim 1, requires the use of an estimate of affine geometric distortion parameters to transform an image block of a watermarked image to a position approximating an original orientation of the image block in the watermarked image; shifting the transformed block to neighboring locations and computing correlation between the a watermark signal and the transformed block at each of the neighboring locations; finding the maximum correlation and computing an offset value from the maximum correlation; and adjusting the watermarked image by the offset value and decoding the watermark message.

5 Claim 4 requires dividing a watermarked signal into blocks, each including a portion of the watermark signal; computing a correlation space comprising a neighborhood of correlation values by correlating the watermarked data with a known watermark signal at a neighborhood around the block; and finding the correlation maxima, where the correlation maxima indicates a local offset used to align the watermarked data in the block before decoding the watermark message. While Kalker et al. '706 (WO 99/45706 A2) teaches the use of correlations between

10 watermark data and a known watermark signal, Kalker et al. '706 fails to teach dividing the watermarked signal into blocks or transforming the block using an estimate of affine geometric distortion parameters, as variously required by the claimed invention. Cox et al. '434 (US 6,108,434 A) teaches using shifted blocks and correlation to detect a watermarked signal, but

15 fails to teach using a maximum correlation value to indicate or compute an offset value to align the watermarked data prior to extraction of the watermark message, as also variously stipulated

20 by the claimed invention. Therefore, the claimed invention is allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5 2. Claims 1-7 are allowed.

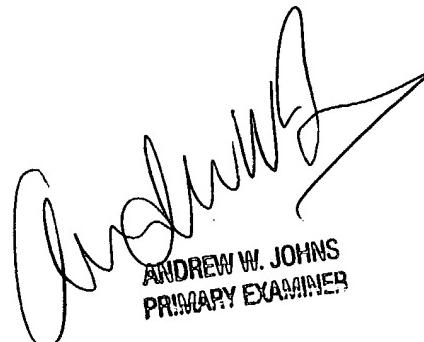
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang teaches using autocorrelation for window-sized portions of images to detect watermarks, but fails to teach determining a correlation surface for neighboring locations. The remaining references variously teach methods for detecting or extracting watermarks in 10 geometrically distorted data.

15 4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Johns whose telephone number is (703) 305-4788. The examiner is normally available Monday through Friday, at least during the hours of 9:00 am to 3:00 pm Eastern Time. The examiner may also be contacted by e-mail using the address: andrew.johns@uspto.gov. (Applicant is reminded of the Office policy regarding e-mail communications. See M.P.E.P. § 502.03)

20 If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached on (703) 305-4706. The fax phone number for this art unit is (703) 872-9306. In order to ensure prompt delivery to the examiner, all unofficial communications 25 should be clearly labeled as "Draft" or "Unofficial."

25 Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center Receptionist whose telephone number is (703) 305-4700.

30 A. Johns  
26 November 2004



ANDREW W. JOHNS  
PRIMARY EXAMINER